

RXR α siRNA (h): sc-36447

BACKGROUND

Two families of retinoid receptors, RARs and RXRs, have been identified. Retinoic acid receptors (RARs) include RAR α , RAR β and RAR γ , each of which have a high affinity for all *trans*-retinoic acids and belong to the same class of nuclear transcription factors as thyroid hormone receptors, vitamin D₃ receptor and ecdysone receptor. The ligand-binding domains of the RARs are highly conserved and RAR isoforms are expressed in distinct patterns throughout development and in the mature organism. Members of the retinoid X receptor (RXR) family, RXR α , RXR β and RXR γ , are activated by 9-*cis*-RA, a stereo- and photo-isomer of all *trans*-RA that is expressed *in vivo* in both liver and kidney and may represent a widely used hormone. As is true for the RAR subfamily, the RXR receptors are closely related to each other both in their DNA-binding and ligand-binding domains and are encoded by separate genes at distinct chromosomal loci.

REFERENCES

1. Ishikawa, T., et al. 1990. A functional retinoic acid receptor encoded by the gene on human chromosome 12. *Mol. Endocrinol.* 4: 837-844.
2. Yang, N., et al. 1991. Characterization of DNA-binding and retinoic acid-binding properties of retinoic acid receptor. *Proc. Natl. Acad. Sci. USA* 88: 3559-3563.
3. Koelle, M.R., et al. 1991. The *Drosophila* EcR gene encodes an ecdysone receptor, a new member of the steroid receptor superfamily. *Cell* 67: 59-77.

CHROMOSOMAL LOCATION

Genetic locus: RXRA (human) mapping to 9q34.2.

PRODUCT

RXR α siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see RXR α shRNA Plasmid (h): sc-36447-SH and RXR α shRNA (h) Lentiviral Particles: sc-36447-V as alternate gene silencing products.

For independent verification of RXR α (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-36447A, sc-36447B and sc-36447C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNases and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

RXR α siRNA (h) is recommended for the inhibition of RXR α expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 μ M in 66 μ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

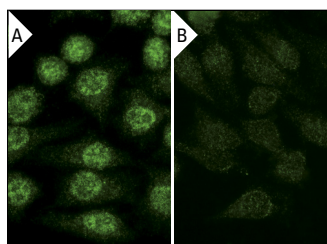
GENE EXPRESSION MONITORING

RXR α / β / γ (F-1): sc-46659 is recommended as a control antibody for monitoring of RXR α gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor RXR α gene expression knockdown using RT-PCR Primer: RXR α (h)-PR: sc-36447-PR (20 μ l, 443 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

DATA



RXR α siRNA (h): sc-36447. Immunofluorescence staining of methanol-fixed, control HeLa (A) and RXR α siRNA silenced HeLa (B) cells showing diminished nuclear staining in the siRNA silenced cells. Cells probed with RXR α (D-20): sc-553.

SELECT PRODUCT CITATIONS

1. Park, E.J., et al. 2011. Induction of retinoid X receptor activity and consequent upregulation of p21^{WAF1/CIP1} by indenoisoquinolines in MCF7 cells. *Cancer Prev. Res.* 4: 592-607.
2. Hitomi, Y., et al. 2019. NFKB1 and MANBA confer disease susceptibility to primary biliary cholangitis via independent putative primary functional variants. *Cell. Mol. Gastroenterol. Hepatol.* 7: 515-532.
3. Ma, C., et al. 2021. Danthron ameliorates obesity and MAFLD through activating the interplay between PPAR α /RXR α heterodimer and adiponectin receptor 2. *Biomed. Pharmacother.* 137: 111344.

RESEARCH USE

For research use only, not for use in diagnostic procedures.